IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Laquai, B.

SERIAL No. Unassigned EXAMINER: Unassigned

FILED: Herewith GROUP No.: Unassigned

TITLE: FILTER FOR INJECTING DATA DEPENDENT JITTER AND LEVEL NOISE

Attorney Docket No.: 20 01 0619

Commissioner For Patents
Washington, D.C. 20231

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on Oct 11 2001 (Date of Deposit)

Allison Berkman
Name

Allison Berkman
Signature

PRELIMINARY AMENDMENT

Dear Sir:

Please amend the application as follows:

In The Specification

Please amend the specification as follows:

On page 1, between lines 3 and 4, insert -- 1. Field of the Invention --.

On page 1, between lines 5 and 6, insert --2. Discussion of the Background Art --.

On page 1, between lines 15 and 16, insert --Summary of The Invention --.

On page 1, between lines 19 and 20, insert the following paragraph:

--A filter is provided for injecting data dependent jitter and level noise into a digital data signal with a given data rate. The filter reacts on a step function with a step response showing after a first increase or decrease a substantial extreme value,

such as a minimum or a maximum, of opposite direction than the first increase or decrease. The temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.--

In The Abstract

Please amend the Abstract as follows:

A filter for injecting data dependent jitter and level noise into a digital data signal with a given data rate reacts on a step function with a step response showing after a first increase or decrease a substantial extreme value, such as a minimum or a maximum, of opposite direction than the first increase or decrease. The temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.

In The Claims

Please amend the claims as follows:

1. (Amended) A filter for injecting data dependent jitter and level noise into a digital data signal with a given data rate comprising:

circuitry for reacting on a step function with a step response showing after a first increase or decrease a substantial extreme value of opposite direction than the first increase or decrease, whereby the temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.

2. (Amended) The filter of claim 1, wherein the filter is of at least second order.

3. (Amended) The filter of claim 2, wherein the filter comprises a resistive element with resistance value of R_2, an inductive element with an inductivity value of L_1, and a capacitive element with capacitance value of C_1.

4. (Amended) The filter of claim 3, wherein the resistive value of R_2 and/or the capacitive value of C_1 can be varied.

5. (Amended) The filter of claim 3, wherein the resistive element, the inductive element, and the capacitive element are coupled as a series or a parallel resonance circuit

6. (Amended) The filter of claim 2 comprising a resistive element and at least two elements of capacitive and/or inductive behavior.

7. (Amended) The filter of claim 2, wherein both zeros of the second order filter are located on the unit circle, and both zeros are closer to the imaginary axis than the poles or the poles are located on the real axis.

8. (Amended) A jitter injection filter for injecting data dependent and level noise into a digital data signal with a given data rate comprising:

circuitry for reacting on an increasing step function with a step response showing at least one substantial minimum after a first increase, whereby the temporal occurrence of the at least one substantial minimum from the step function is substantially in the range of the given data rate.

9. (Amended) Use of a filter according to claim 1 for injecting data dependent and level noise into a digital data signal with a given data rate.

10. (Amended) A method for injecting data dependent jitter and level noise into a digital data signal with a given data rate comprising:

reacting on a step function with a step response showing after a first increase or decrease a substantial extreme value of opposite direction than the first increase or decrease, whereby the temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.

11. (Amended) A method for injecting data dependent jitter and level noise into a digital data signal with a given data rate, the method comprising:

applying the digital data signal to a filter reacting on a step function with a step response showing after a first increase or decrease a substantial extreme value of opposite direction than the first increase or decrease, and

adjusting the filter so that the temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.

12. (Amended) A software program or product stored on a data carrier, for executing a method for injecting data dependent jitter and level noise into a digital data signal with a given data rate when run on a data processing system, the method comprising:.

applying the digital data signal to a filter reacting on a step function with a step response showing after a first increase or decrease a substantial extreme value of opposite direction than the first increase or decrease, and

adjusting the filter so that the temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.

Remarks

Claims 1-12 remain in the application.

The specification has been amended to include headings in accordance with US practice.

The specification has also been amended to include the features of claim 1 in the Summary Of The Invention. Applicant has taken care not to add new matter.

The Abstract of the Disclosure has been amended to eliminate reference numbers and to comply with MPEP 608.01(b).

Claims 1-12 have been amended to eliminate reference numbers and the phrase "the steps of." As such, claims 1-12 have been clarified by amendment for purposes of form. It is respectfully submitted that the amendments to claims 1-12 are neither narrowing nor made for substantial reasons related to patentablity as defined by the Court of Appeals for the Federal Circuit (CAFC) in Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 95-1066 (Fed. Cir. 2000). Therefore, the amendments to claims 1-12 do not create prosecution history estoppel and, as such, the doctrine of equivalents is available for all of the elements of claims 1-12.

Consideration and allowance of application is respectfully requested.

Attached hereto is a marked up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes Made."

Respectfully submitted,

11/16/01
Date

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Specification

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On page 1, between lines 15 and 16, insert --Summary of The Invention --.

On page 1, between lines 19 and 20, insert the following paragraph:

--A filter is provided for injecting data dependent jitter and level noise into a digital data signal with a given data rate. The filter reacts on a step function with a step response showing after a first increase or decrease a substantial extreme value, such as a minimum or a maximum, of opposite direction than the first increase or decrease. The temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.--

In The Abstract

Please amend the Abstract as follows:

A filter [(20) is provided] for injecting data dependent jitter and level noise into a digital data signal [(1)] with a given data rate [(A). The filter (20)] reacts on a step function with a step response [(2)] showing after a first increase or decrease [(B)] a substantial extreme value [(C)], such as a minimum or a maximum, of opposite direction than the first increase or decrease. The temporal occurrence of the substantial extreme value [(C)] with respect to the step function is substantially in the range of the given data rate [(A)].

[Fig. 1 for publication]

In The Claims

Please amend the claims as follows:

SERIAL No. Unassigned
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1. (Amended) A filter [(20)] for injecting data dependent jitter and level noise into a digital data signal [(1)] with a given data rate [(A), the filter (20)] comprising:

circuitry for reacting on a step function with a step response [(2)] showing after a first increase or decrease [(B)] a substantial extreme value [(C), such as a minimum or a maximum,] of opposite direction than the first increase or decrease, whereby the temporal occurrence of the substantial extreme value [(C)] with respect to the step function is substantially in the range of the given data rate [(A)].

2. (Amended) The filter [(20)] of claim 1, wherein the filter [(20)] is of at least second order.

3. (Amended) The filter [(20)] of claim 2, wherein the filter [(20)] comprises a resistive element [(210)] with resistance value of R_2, an inductive element [(220)] with an inductivity value of L_1, and a capacitive element [(230)] with capacitance value of C_1.

4. (Amended) The filter [(20)] of claim 3, wherein the resistive value of R_2 and/or the capacitive value of C_1 can be varied.

5. (Amended) The filter [(20)] of claim 3, wherein the resistive element [(210)], the inductive element [(220)], and the capacitive element [(230)] are coupled as a series or a parallel resonance circuit

6. (Amended) The filter [(20)] of claim 2 comprising a resistive element [(210)] and at least two elements of capacitive [(230)] and/or inductive [(220)] behavior.

7. (Amended) The filter [(20)] of claim 2, wherein both zeros of the second order filter [(20)] are located on the unit circle, and both zeros are closer to the imaginary axis than the poles or the poles are located on the real axis.

8. (Amended) A jitter injection filter [(20)] for injecting data dependent and level noise into a digital data signal with a given data rate[, the filter (20)] comprising:

circuitry for reacting on an increasing step function with a step response showing at least one substantial minimum after a first increase, whereby the temporal occurrence of the at least one substantial minimum from the step function is substantially in the range of the given data rate.

9. (Amended) Use of a filter [(20)] according to claim 1 [or 8] for injecting data dependent and level noise into a digital data signal with a given data rate.

10. (Amended) A method for injecting data dependent jitter and level noise into a digital data signal [(1)] with a given data rate [(A) by using a filter (20) according to claim 1 or 8] comprising:

reacting on a step function with a step response showing after a first increase or decrease a substantial extreme value of opposite direction than the first increase or decrease, whereby the temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.

11. (Amended) A method for injecting data dependent jitter and level noise into a digital data signal [(1)] with a given data rate [(A)], the method comprising [the steps of]:

applying the digital data signal [(1)] to a filter [(20)] reacting on a step function with a step response [(2)] showing after a first increase or decrease [(B)] a substantial extreme value [(C), such as a minimum or a maximum,] of opposite direction than the first increase or decrease, and

adjusting the filter [(20)] so that the temporal occurrence of the substantial extreme value [(C)] with respect to the step function is substantially in the range of the given data rate [(A)].

12. (Amended) A software program or product[, preferably] stored on a data carrier, for executing [the method of claim 11] a method for injecting data dependent jitter and level noise into a digital data signal with a given data rate when run on a data processing system [such as a computer] , the method comprising:.

applying the digital data signal to a filter reacting on a step function with a step response showing after a first increase or decrease a substantial extreme value of opposite direction than the first increase or decrease, and

adjusting the filter so that the temporal occurrence of the substantial extreme value with respect to the step function is substantially in the range of the given data rate.